DOCUMENT RESUME

ED 216 700 IR 010 240

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TITLE What Children Could Learn from TV.
PUB DATE May 81
NOTE 12p.; A Summary Based on a Series of Investigations by Dr. G. A. Kohnstamm.
AVAILABLE FROM Staats Uitgeverij, The Hague (f135, per copy).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Attention Span; *Childhood Attitudes; Children; Comprehension; *Educational Television; Foreign Countries; Knowledge Level; Perception; Political Socialization; *Programing (Broadcast); Research Problems; Social Behavior; *Television Viewing; Visual Literacy
IDENTIFIERS Netherlands; Reality

ABSTRACT

Part of a series of investigations undertaken at the University of Leiden by Dr. G. A. Kohnstamm to investigate how children process information from audiovisual media, particularly television, this literature review maps out the educational possibilities of television for children up to the age of 12. Research findings reviewed are concerned with: (1) television literacy as reflected in attention during television viewing, perception of reality, the understanding of stories, the importance of fixed program formats, and the concept of television time; (2) the impact of television on children's attitudes; (3) the impact of television on prosocial behavior; (4) the impact of television on political knowledge and knowledge of school subject matter; and (5) the impact of television in relation to the characteristics of children, the television program, and the viewing situation. Research proposals for 12 topics relating to children and television are outlined. (Author/JL)

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WHAT CHILDREN COULD LEARN FROM TV

A Summary

by

Peter Levelt

based upon a series of investigations by

Dr. G. A. Kohnstamm

IR010290

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SUMMARY

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WHAT CHILDREN COULD LEARN FROM TV

1 INTRODUCTION

This literature study is part of a series of investigations, begun ten years ago by prof Dr G.A. Kohnstamm.* The aim was to investigate how children process information from audiovisual media, particularly tv.
This study was motivated by the relative lack of knowledge in the Netherlands of research into educational children's tv. As a result there was no satisfactory research policy, nor were there good examples of research design to be had.
In this study we will try to map out the educational possibilities of tv for children up to twelve. We wish to provide researchers with grounds for priorities and access to the international literature. We also aim to contribute to the insight of tv producers; we wish to show the way in which children interpret the conventions of tv, and the educational possibilities of tv. Finally we want to stimulate the interest of parents and teachers in the impact of tv on children.

The following subjects are dealt with:
1) Tv literacy of children; the skills of children in dealing with a number of programme characteristics.
2) Possible positive impact of tv on attitudes, social behaviour and knowledge.
3) Conclusions concerning the educational possibilities of tv: recommendations for priorities in research.

Our data are firstly a body of literature, mostly from the 1970's: and secondly a large number of observations of children's reactions to tv. Finally, our cooperation in the Dutch

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Sesame Street programme has provided frequent contact with the producers.

2 TV LITERACY

In this chapter the skills of children in coping with tv and the development of skills are discussed. We investigate the requirements of formal attributes of programmes - the conventions of producers - so that the attention, the perception and the comprehension of children is facilitated.

In the first place *attention* is discussed. Several behavioural indicators of attention are reviewed, particularly eye-contact, eye-movements and presence. It appears that attention in children increases up to about six years. Some examples are presented of research on attention aimed at revealing attributes that attract attention. As yet, there are no generally applicable rules.
Enhancing attention can impair the content of programmes. Desired activities, elicited by programmes may depress attention; removal of attention-depressing attributes may lead to impoverishment. Attention-drawing attributes may deafen the message. In educational tv research on attention becomes more important as the supply of programmes increases, particularly if this research is aimed at the selection of programmes by children. However there is little research on the relation between attention in tv watching and learning. It appears that in order to acquire more insight into learning-processes eye-movement studies are a useful instrument.

Secondly, the *perception of reality* is discussed. We investigate the validity of the opinion that the impact of tv decreases if programmes are interpreted as less realistic. It is our thesis that a priori determination of the reality of programmes on the basis of programme characteristics is inadequate. A causal relationship between programme characteristics and the

perception of reality is not yet established.
There are indications that perception of reality is not a one-dimensional concept. The characteristics which children perceive as realistic change with increasing age. A large number of our observations on children reveal how they perceive tv reality, how this is different for grown-ups and how this develops. These observations also show that a large area still lies unexplored. With regard to the significance of perception of reality, there is evidence that more realistic material has a greater impact; but there is scarcely any evidence that more realistically *perceived* material has more impact. We suggest that increased understanding of the conventions of tv programmes - and consequently a decreased reality perception - may lead to greater enjoyment and enhanced learning.

In the third place *story understanding* is reviewed. Producers often use stories, that is a successive development of events with a beginning and an end. Children's understanding of elements of stories and coherence in stories is discussed.
A distinction is made between central and peripheral material; the former is directly related to the plot. Understanding both types of elements develops with age. The same applies for the distinction between auditory and visual material; older children more skilfully process relatively things heard than things seen. We want to emphasize the relation of these elements to the educational aim. There is the harmfull tendency to present educationally important information in *words* while at the same time the *images* divert the child's attention from the message. An information-theory point of view might contribute to more varied, more relevant and more comprehensive research, for example on the relationship between sound and image.
In this type of research the method of measurement determines what levels of understanding are to be found. In our view this is the reason why the children's understanding of logical and chronological order is underestimated. Some evidence to support this view is presented from areas outside tv research. It appears

that material without inherent structure cannot be reproduced after a short interval in an orderly way. Breaking down this structure (flash-backs!) completely prevents reproduction for young children.
Finally, the understanding of stories as instances of motives-action-consequences ordering is discussed. Only older children develop an understanding for this ordering, especially for motives. We question whether this is caused by the inability to give a clear expression to motives.

In the fourth place the importance of the use of *fixed, recurrent formats* is investigated. These formats offer children a familiar context in which new, educational experiences can be presented. At a very young age children discover these formats: these formats motivate them and clarify what is expected, which in turn activates the children. We present a number of reactions of children to these formats and refer to the problem of overgeneralization from form to content.

In the fifth place we treat the concept of *tv-time:* interpretation of duration, of time order and of manipulations of time, as these are frequent in tv programmes. In our opinion, the latter constitute a heavy burden on children's processing. On the other hand these manipulations can be utilized for educational purposes.

In the sixth place we examine *space* as it is realized in tv programmes. We assume that children have little understanding of space as created by tv. However, this appears to us hardly relevant for understanding tv-events.

3 THE IMPACT OF TV ON ATTITUDES

Such social-political developments as the struggle against racial discrimination, women's liberation movement and concern about increasing violence have been an impetus for research on attitudes.

In the first place attitudes towards *minorities* are considered. We start with the representation of minorities, particularly blacks, on tv. It is concluded that in the USA their position on the screen has changed for the better, both as to the frequency of occurrence and as to their occupational status. Some forms of subtle discrimination are still met.
There are no data available that minority children, who prefer their own programmes and own characters, develop a more positive attitude towards their own group, because of a more positive representation on the screen. There is some evidence that the attitude of "majority" children towards minorities can be influenced in a positive way.

In the second place attitudes towards *sex-rôles* are exposed. We demonstrate that the ordinary tv-programmes, commercials, children's programmes and even educational programmes show a stereotyped image of men and women. This refers both to the frequency of occurrence - only 1/3 to 1/4 of tv characters are women - as to occupational representation - women less often have out-of-home occupations than is in fact the case. Also the personality traits, particularly dominance, for women and men are stereotyped.
We have established that the children's *perception* of the tv world is even more sexist: they have preferences, determined by their sex, for programmes in which the most stereotypic portrayal gets most attention. It has been shown that heavy viewers have more stereotypic beliefs: The causal relation here is obscure. In a few instances it has been shown that contra-stereotypic programmes and spots lead to less stereotypic beliefs.

Finally the impact of tv on attitudes towards occupations, towards school subjects and towards commercials are discussed.

4 THE IMPACT OF TV ON PROSOCIAL BEHAVIOUR

Content-analyses of programmes indicate that there are large variations in the proportion of negative and positive behaviour (in casu violence versus prosocial behaviour), between programmes and between countries. Some programmes specially made for children emphasize prosocial examples.
It seems likely that children who do give a prosocial interpretation to these examples and find them important and real will be more affected by them. Unfortunately there is no research on how children perceive this kind of behaviour.
Successively we review the influence of tv models on sharing, cooperation, helping, turn taking, rule obedience and phantasy play. Influences are established on the first three. Two types of influences are distinguished: a short term effect of moods elicited by programmes. For instance perceiving punishment, particularly punishment without explicit motive, may cause cautiousness or anxiety, which may lead to more prosocial behaviour. There may be a long term effect on specific actions. Children may imitate these and learn these. Generalization towards other situations and actions than those seen on tv is, however, rather improbable.

5 THE IMPACT OF TV ON KNOWLEDGE

In this chapter we investigate the influence of tv on political knowledge, school subject matter and more general issues like intelligence, school performance and language aptitude.

On the impact of *political knowledge* only a few studies are available. Watching the news may lead to a greater political consciousness; anyway, children learn something about political candidates.

Application of research data on the Dutch children's news elicits the following remarks:

1) Since children are not very interested in this news, the Dutch Broadcasting Foundation (NOS) has selected a time for broadcasting before the normal viewing time for these children, so that the news must be super attractive.

2) As girls are less interested in the news, their choice of a female presentation is appropriate.

3) Comprehensibility studies are required.

With regard to *school subject matter*, a number of investigations about what children learn from Sesame Street and its various foreign adaptations are reviewed. The influence of watching this programme is overestimated, because "encouragement to watch" and "watching" are not well distinguished. In these studies the initial knowledge of the children is not sufficiently taken into account: brighter children watch somewhat more frequently, but the unreliability of the test may have caused underestimation of the effect of the series. Otherwise, it is well confirmed that children can learn something from the programme, particularly if there is some (parental) support. The importance of Sesame Street is also found in the impetus it has provided for the many investigations on the positive possibilities of tv.

The influence of some school-tv series on mathematical knowledge is hard to establish, both because there are defects in the research design, and particularly because again watching tv and support are confounded.

The suggestion that tv watching may lead to increased *intelligence*, particularly of less intelligent children, cannot be confirmed on the basis of results of research. Relations between tv watching on the one hand and general knowledge and school performance on the other are not clear. However, a negative relation between tv watching and language development is established. We pose the hypothesis that a home environment which does not put any constraints on tv watching can also be an impediment to language development.

6 TV: CHILDREN, PRODUCERS, PARENTS, TEACHERS AND RESEARCHERS

In this chapter conclusions are drawn about the possible positive impact of tv and some suggestions for tv producers, parents and teachers are put forward. Recommendations for future research are also made.

Field studies have established that there is a positive influence of normal, open net tv programmes on knowledge; but none has been found on attitudes nor on behaviour. However, we believe that a different programme content will have an effect upon attitudes and behaviour and more effect on knowledge; but a good research design will be needed to demonstrate these effects. Our reason is that such effects have been found in experiments.

A number of conditions for these positive influences are:
1) *Characteristics of children*: tv literacy, personality traits, sex, intelligence, social economic status, experience and development. We believe that the meager results of research can be due to extremely diverse, individual reactions to tv programmes.
2) *Characteristics of tv programmes*. There are only a small number of educational programmes because tv producers are not aware of their educational responsibility and because implementation of educational goals is very difficult.
3) *Characteristics of the situation*. In some studies it appears that a tv programme has much more impact when it is integrated within a curriculum. However, it is not clear what the rôle of the tv programme is in this case. It has also be found that some *support* for children during tv watching leads to better results than *watching*. What constitutes effective support is unclear.
We have found an increased interest for tv education on the part of everyone concerned. We hope encourage this development with a guide for teacher/parent meetings and with publications in the mass media. We will continue the advisory relations with producers.

Research proposals for the following subjects are presented.

1) Attention: research on attention drawing attributes, on the relation between attention and learning and on the impact of tv watching on concentration.

2) The perception of reality: research on what characteristics of programmes influence this, how it develops with age, what affect it has as an intervening variable in the other affects that tv has and how this intervening affect can be controlled; and research on how greater awareness of irreality on tv affects children's ability to criticize programmes.

3) Research in story understanding; understanding fixed formats, time and space perception.

4) Attitudes: research related to minorities and sex-rôles.

5) Research on the influence on prosocial behaviour, with an emphasis on extensive exploratory studies.

6) Knowledge: research on the transfer of knowledge that is only available on tv is the best approach to exploring the possibilities of tv. We also think that it is important to do some more research on the influence of support for children watching programmes. Research on the influence of tv on language development appears to be desirable.

7) Analysis of form and content, and how children perceive this to ascertain the impact on attitude, behaviour and knowledge.

8) School-tv: research on the effects of school-tv programmes on attitude formation and educational innovation. This is particularly important for the rôle of school-tv in the Netherlands.

9) Commercials: critical literature surveys on what is known about the impact of commercials on children, to expose lies of influential publicity experts and to provide public policy makers with adequate data.

10) Programme research: We argue for more psychological research to support programmes, particularly for projects of some size. The extensive scope of tv justifies a drastic increase of research efforts.

11) Research on anxiety provoking rumors, for example: tv watching causes brain damage, causes underdeveloped reading and writing abilities and inhibits sensorimotor developments.
12) Informal observations: exploratory studies by parents and teachers to acquire more insight into the rôle of tv on moods, into individual differences in reactions to tv, into the experience and perception of the children themselves and into the rôle of support.